What is claimed is:

IN THE CLAIMS:

Please amend claims 27-49 and add claims 50-54 as follows:

1. (Cancelled)

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Cancelled)

10. (Cancelled)

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

14. (Cancelled)

15. (Cancelled)

16. (Cancelled)

17. (Cancelled)

18. (Cancelled)

19. (Cancelled)

20. (Cancelled)

21. (Cancelled)

22. (Cancelled)

23. (Cancelled)

24. (Cancelled)

25. (Cancelled)

26. (Cancelled)

27. (Currently Amended) A ~~M~~method for determining a~~the~~ number of receptors on a carrier, comprising the steps of:

(a) preparing a carrier;

(b) immobilizing at least one receptor on the carrier, with the receptor having the ability to interact with a ligand ~~and~~ to form a receptor-ligand complex;

(c) after immobilization of ~~at~~ the at least one receptor on the carrier, bringing a marker in contact with the receptor~~, in order~~ to form a receptor-marker complex with separable binding between the receptor and the marker; and

(d) determining the number of the receptors on the carrier by detecting the receptor-marker complexes;

where~~in~~ the receptor-marker complexes are detected independently of receptor-ligand complexes.

28. (Currently Amended) The method of claim 27, further comprising the step of:

(i) bringing the receptor in contact with a test sample that is to be examined for its content of ligands.

29. (Currently Amended) The method of claim 28, further comprising the step of:

(ii) following step (i), detecting the receptor-ligand complexes.

30. (Currently Amended) The method of claim 27, wherein the carrier is a semiconductor with a surface comprised of a material from the group comprising silicon, semimetal oxides, including SiO_x, and aluminum oxide.

31. (Currently Amended) The method of claim 27, wherein the receptor is selected from the group comprising antibodies, including monoclonal or polyclonal antibodies, and functional fragments thereof, proteins, oligo- and polypeptides, nucleic acids, including DNA, RNA, cDNA, PNA, oligo- and polynucleotides; and saccharides, including mono-, di-, tri-, oligo-, and polysaccharides.

32. (Currently Amended) The method of claim 27, wherein a binding between the receptor and the ligand in the receptor-ligand complex is separable.

33. (Currently Amended) The method of claim 27, wherein a binding between the receptor and the ligand in the receptor-ligand complex has a half-life in a range of at least microseconds.

34. (Currently Amended) The method of claim 27, wherein n markers are associated with n receptors.

35. (Currently Amended) The method of claim 27, wherein the marker comprises reactive

groups~~, especially thiol groups~~.

36. (Currently Amended) The method of claim 27, where~~in~~ the marker comprises a dye from the group comprising a luminescent dye, a chemoluminescent dye, a photoluminescent dye, and~~or~~ a bioluminescent dye.

37. (Currently Amended) The method of claim 27, where~~in~~ the marker comprises a fluorescent dye~~,~~ from the group comprising ~~preferably~~ a fluorochrome, ~~and with greater preference~~ a rhodamine, and ~~especially~~ tetramethylrhodamine isothiocyanate.

38. (Currently Amended) The method of claim 27, where~~in~~ the receptor comprises inherent fluorescence.

39. (Currently Amended) The method of claim 38, where~~in~~ the inherent fluorescence is provided by amino acid tryptophan ~~provides the inherent fluorescence~~.

40. (Currently Amended) The method of claim 38, where~~in~~ the binding between the receptor and the marker in the receptor-marker complex has a fluorescence half-life in a~~the~~ range of nanoseconds.

41. (Currently Amended) The method of claim 27, where~~in~~ the receptor-marker complex includes fluorescence resonance energy transfer.

42. (Currently Amended) The method of claim 41, where~~in~~ the fluorescence of the fluorescence

resonance energy transfer is modified by anthe interaction of the ligand with the receptor.

43. (Currently Amended) The method of claim 41, wherein the receptor has athe donor and anthe acceptor of the fluorescence resonance energy transfer.

44. (Currently Amended) The method of claim 41, wherein the fluorescence is produced by athe donor andor the fluorescence is quenched by anthe acceptor.

45. (Currently Amended) The method of claim 41, wherein the ligand acts as athe donor of the fluorescence resonance energy transfer.

46. (Currently Amended) The method of claim 41, wherein the ligand brings athe donor and anthe acceptor of the fluorescence resonance energy transfer directly into contact.

47. (Currently Amended) The method of claim 41, wherein fluorescence-labeled ligands are used.

48. (Currently Amended) The method of claim 4227, wherein the marker is a microparticle.

49. (Currently Amended) A method forof determining athe number of receptors ~~using a biosensor~~, comprising the steps of:

(a) preparing a semiconductor carrier;

(b) immobilizing at least one receptor on the carrier, with the receptor having the ability to

interact with a ligand ~~and~~ to form a receptor-ligand complex;

(c) after immobilization of at the at least one receptor on the carrier, bringing a marker in contact with the receptor~~, in order~~ to form a receptor-marker complex with separable binding between the receptor and the marker; and

(d) determining the number of receptors on the carrier by detecting the receptor-marker complexes;

wherein the receptor-marker complexes are detected independently of receptor-ligand complexes, the marker comprisesing a ~~luminescent~~ dye~~, a chemoluminescent, a photoluminescent dye, or a bioluminescent dye~~.

50. (New) A method for determining a number of receptors on a carrier, comprising the steps of:

immobilizing a receptor on the carrier;

bringing a marker in contact with the receptor to form a receptor-marker complex;

detecting the receptor-marker complexes; and

determining the number of the receptors on the carrier from the detected receptor-marker complexes.

51. (New) The method of claim 50, comprising preparing the carrier prior to the step of immobilizing.

52. (New) The method of claim 50, where the step of bringing a marker in contact with the receptor to form a receptor-marker complex is performed prior to the step of immobilizing a receptor on a carrier.

53. (New) The method of claim 50, where the steps of immobilizing a receptor on the carrier and bringing a marker in contact with the receptor to form a receptor-marker complex are performed at the same time in a single step.

54. (New) The method of claim 50, further comprising the steps of bringing the receptor in contact with a test sample to be examined for its content of ligands, and detecting receptor-ligand complexes.